

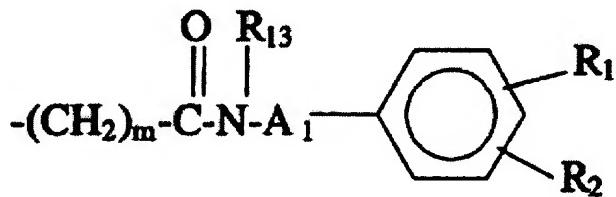
This listing of claims will replace all prior versions, and listing, of claims in the application:

**Listing of Claims:**

Claim 1 (previously presented): A diagnostic agent comprising an aminocarboxylate ligand complexed with a paramagnetic metal ion wherein a nitrogen atom within said aminocarboxylate is substituted with a group comprising an aromatic amide containing at least one substitution on the aromatic ring, the substitution comprising a group of 3 or more non-hydrogen atoms.

Claim 2 (currently amended): The diagnostic agent of claim 1 wherein said substituted aromatic amide group is of the formula

I



wherein

$\text{A}_1$  is  $-(\text{CH}_2)_m'$  — or a single bond;

$(\text{CH}_2)_m$  and  $(\text{CH}_2)_m'$  may independently be substituted with alkyl or hydroxyalkyl;

$\text{R}_1$  and  $\text{R}_2$  are independently hydrogen,



where  $\text{R}_9$  is  $\text{C}_4 - \text{C}_{18}$  a straight or branched chain alkyl or hydroxyalkyl, with the proviso that at least one of  $\text{R}_1$  and  $\text{R}_2$  must be other than hydrogen;

$\text{R}_3$  and  $\text{R}_4$  are independently hydrogen, alkyl, arylalkyl, aryl, alkoxy and hydroxyalkyl;

$\text{R}_{12}$  is hydrogen, alkyl or hydroxyalkyl;

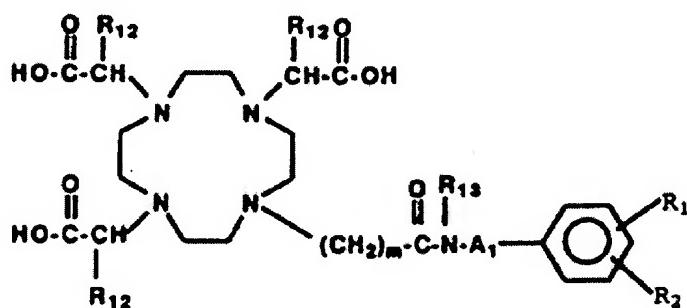
$R_{13}$  is hydrogen, alkyl or arylalkyl, aryl, alkoxy or hydroxyalkyl;

$m$  and  $m'$  are independently 0 to 5;

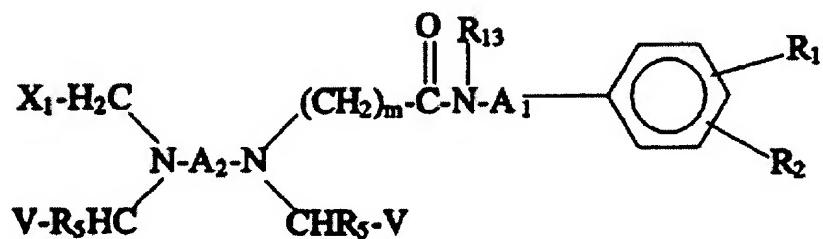
and multimeric forms thereof.

Claim 3 (previously presented): A diagnostic agent of claim 2 wherein said ligand is of the formula

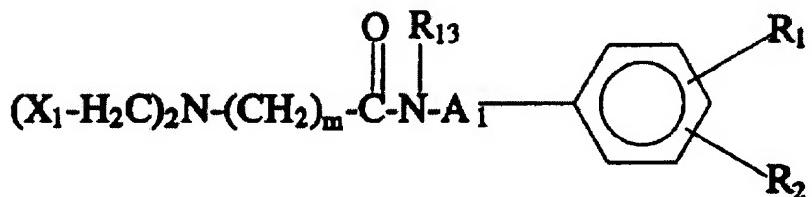
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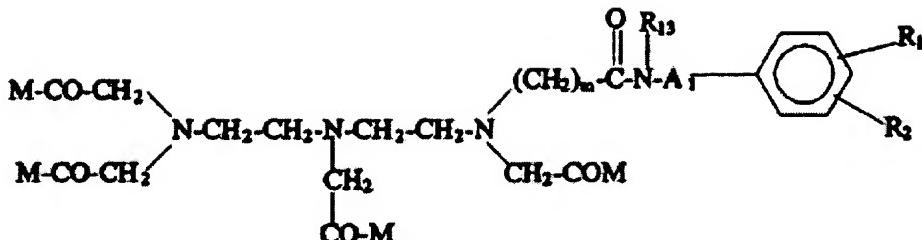


Ib



Ic



**Id**

wherein  $m$ ,  $R_{13}$ ,  $A_1$ ,  $R_1$ ,  $R_2$ , and  $R_{12}$  are as defined in claim 2 and wherein

$X_1$  is  $-\text{COOY}_1$ ,  $\text{PO}_3\text{HY}_1$  or  $-\text{CONHOY}_1$ ;

$Y_1$  is a hydrogen atom, a metal ion equivalent and/or a physiologically biocompatible cation of an inorganic or organic base or amino acid;

$A_2$  is  $-\text{CHR}_6\text{-CHR}_7-$ ,  $-\text{CH}_2\text{CH}_2(\text{ZCH}_2\text{-CH}_2)_n-$ ,

$\begin{array}{c} \text{N}(\text{CH}_2\text{X}_1)_2 \\ | \\ -\text{CH}_2\text{-CH-CH}_2 \end{array}$       or       $\begin{array}{c} \text{CH}_2\text{-CH}_2\text{-N}(\text{CH}_2\text{X}_1)_2 \\ | \\ -\text{CH}_2\text{-CH}_2\text{-N-CH}_2\text{-CH}_2- \end{array}$  , wherein  $X_1$  is as defined above;

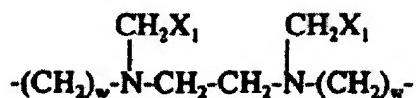
each  $R_5$  is hydrogen or methyl;

$R_6$  and  $R_7$  together represent a trimethylene group or a tetramethylene group or individually are hydrogen atoms, lower alkyl groups (e.g., 1-8 carbons), phenyl groups, benzyl groups or  $R_6$  is a hydrogen atom and  $R_7$  is a  $-(\text{CH}_2)_p\text{-C}_6\text{-H}_4\text{-W-protein}$  where  $p$  is 0 or 1,  $W$  is  $-\text{NH-}$ ,  $-\text{NHCOCO}-$  or  $-\text{NHCS-}$ , protein represents a protein residue;

$n$  is 1, 2 or 3;

$Z$  is an oxygen atom or a sulfur atom or the group  $\text{NCH}_2\text{X}_1$  or  $\text{NCH}_2\text{CH}_2\text{OR}_8$  wherein  $X_1$  is as defined above and  $R_8$  is  $\text{C}_{1-8}$  alkyl;

$V$  is  $X_1$  or is  $-\text{CH}_2\text{OH}$ ,  $-\text{CONH}(\text{CH}_2)_r\text{X}_1$  or  $-\text{COB}$ , wherein  $X_1$  is as defined above,  $B$  is a protein or lipid residue,  $r$  is an integer from 1 to 12, or if  $R_5$ ,  $R_6$  and  $R_7$  are each hydrogen; then both  $V$ 's together form the group

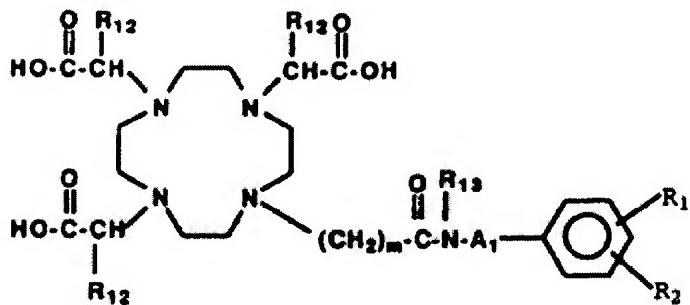


where  $\text{X}_1$  is as above,  $w$  is 1, 2 or 3, provided that at least two of the substituents  $\text{Y}_1$  represent metal ion equivalents of an element with an atomic number of 21 to 29, 42, 44 or 57 to 83; from 1 to 4, advantageously 2 or 3, and preferably 2 M's are -OH and the balance independently are -OR<sub>10</sub>, -NH<sub>2</sub>, -NHR<sub>10</sub> and/or NR<sub>10</sub>R<sub>10'</sub> wherein R<sub>10</sub> and R<sub>10'</sub> are selected from an organic alkyl radical of up to 18 carbon atoms which may be substituted.

Claim 4 (original): The diagnostic agent of claim 1 wherein said paramagnetic metal ion is gadolinium.

Claim 5 (canceled)

Claim 6 (currently amended): A compound of the formula



wherein

$\text{A}_1$  is  $-(\text{CH}_2)_m'$  —or a single bond;

$(\text{CH}_2)_m$  and  $(\text{CH}_2)_m'$  may independently be substituted with alkyl or hydroxyalkyl;

R<sub>1</sub> and R<sub>2</sub> are each independently hydrogen,



alkyl,  $-\text{NO}_2$ ,  $-\text{NH}_2$ ,  $-\text{NHCNHR}_{12}$ ,  $-\text{C}-\text{NR}_3\text{R}_4$  and  $\text{NR}_3\text{COR}_9$  where  $\text{R}_9$  is  $\text{C}_4$  -  $\text{C}_{18}$  straight or branched chain alkyl or hydroxyalkyl, with the proviso that at least one of  $\text{R}_1$  and  $\text{R}_2$  must be other than hydrogen;

$\text{R}_3$  and  $\text{R}_4$  are independently hydrogen, alkyl, arylalkyl, aryl, alkoxy and hydroxyalkyl;

$\text{R}_{12}$  is hydrogen, alkyl or hydroxyalkyl;

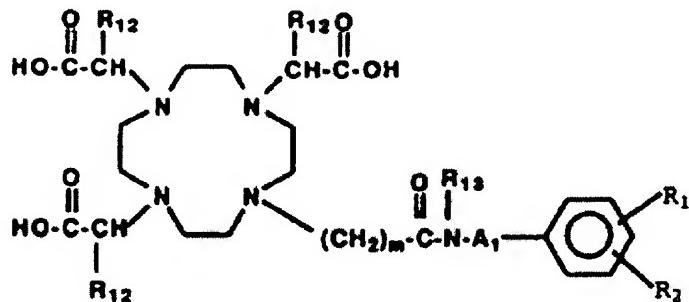
$\text{R}_{13}$  is hydrogen, alkyl, arylalkyl, aryl, alkoxy or hydroxyalkyl;

$m$  and  $m'$  are independently 0 to 5;

and multimeric forms thereof.

Claims 7 - 10 (canceled)

Claim 11 (currently amended): A compound of the formula



having the name ~~10-[2-[[3,5-bis[(2,3-dihydroxypropyl)amino]carbonyl]phenyl]amino]-2-oxoethyl]-1,4,7,10-tetraazacyclododecane-1,4,7-triacetic acid,~~

wherein

A<sub>1</sub> is -(CH<sub>2</sub>)<sub>m</sub>' - or a single bond;

(CH<sub>2</sub>)<sub>m</sub> and (CH<sub>2</sub>)<sub>m</sub>' may independently be substituted with alkyl or hydroxyalkyl;

R<sub>1</sub> and R<sub>2</sub> are each independently hydrogen,

$\begin{array}{c} \text{S} \\ \parallel \\ \text{alkyl, } -\text{NO}_2, -\text{NH}_2, -\text{NHCNHR}_{12}, -\text{C}-\text{NR}_3\text{R}_4 \text{ and } \text{NR}_3\text{COR}_9 \text{ where R}_9 \text{ is C}_4-\text{C}_{18} \text{ straight or} \\ \text{branched chain alkyl or hydroxyalkyl, with the proviso that at least one of R}_1 \text{ and R}_2 \text{ must be} \\ \text{other than hydrogen;} \end{array}$

$\text{R}_3$  and  $\text{R}_4$  are independently hydrogen, alkyl, arylalkyl, aryl, alkoxy and hydroxyalkyl;

$\text{R}_{12}$  is hydrogen, alkyl or hydroxyalkyl;

$\text{R}_{13}$  is hydrogen, alkyl, arylalkyl, aryl, alkoxy or hydroxyalkyl;

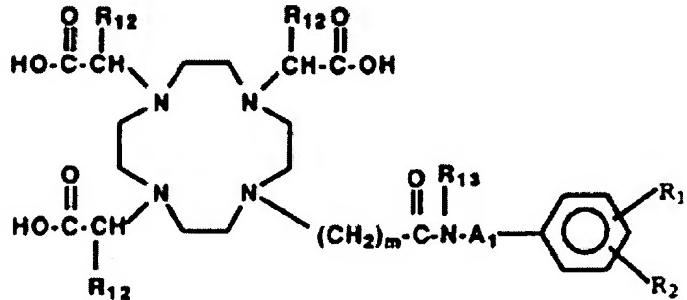
$m$  and  $m'$  are independently 0 to 5;

and multimeric forms thereof.

Claim 12 (original): The gadolinium complex of the compound of claim 11.

Claims 13 - 38 (canceled)

Claim 39 (currently amended): A complex or a pharmaceutically acceptable salt of a complex, of a metal atom and a metal chelating ligand having the formula



wherein

$\text{A}_1$  is  $-(\text{CH}_2)_m-$  or a single bond;

$(\text{CH}_2)_m$  and  $(\text{CH}_2)_m'$  may independently be substituted with alkyl or hydroxyalkyl;

$\text{R}_1$  and  $\text{R}_2$  are each independently hydrogen,



alkyl, -NO<sub>2</sub>, -NH<sub>2</sub>, -NHCNHR<sub>12</sub>, -C-NR<sub>3</sub>R<sub>4</sub> and NR<sub>3</sub>COR<sub>9</sub> where R<sub>9</sub> is C<sub>4</sub>-C<sub>18</sub> straight or branched chain alkyl or hydroxyalkyl, with the proviso that at least one of R<sub>1</sub> and R<sub>2</sub> must be other than hydrogen;

R<sub>3</sub> and R<sub>4</sub> are independently hydrogen, alkyl, arylalkyl, aryl, alkoxy and hydroxyalkyl; R<sub>12</sub> is hydrogen, alkyl or hydroxyalkyl;

R<sub>13</sub> is hydrogen, alkyl, arylalkyl, aryl, alkoxy or hydroxyalkyl;

m and m' are independently 0 to 5;

Claims 40 -50 (cancelled)

Claim 51 (new): The compound of claim 11 having the name 10-[2-[[3,5-bis[(2,3-dihydroxypropyl)amino]-carbonyl]phenyl]amino]-2-oxoethyl]-1,4,7,10-tetraazacyclododecane-1,4,7-triacetic acid.

Claim 52 (new): The gadolinium complex of the compound of claim 51.